

**ADAPTIVE CHANNEL FILTRATION FOR COMMUNICATIONS SYSTEMS**

ABSTRACT OF THE DISCLOSURE

Adaptive channel filtration enables a filter to be adaptively optimized for both co-channel and adjacent channel rejection performance (e.g., even as conditions change in a Rayleigh-fading environment). Principles of the present invention may be incorporated into a homodyne-based receiver architecture. In an exemplary homodyne-based receiver, the power of the adjacent channel interferer is calculated (e.g., determined, estimated, etc.), and an associated (e.g., low pass) channel filter is adapted depending on a ratio involving the total power (e.g., the desired channel plus the adjacent channel) and the adjacent channel power. In one or more embodiments, such a ratio is used with a look up table to produce a desired channel filter bandwidth, which may be used as a basis for creating coefficients for utilization by a low pass channel filter.